Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently Amended) A method for computing the function value of an input node based on function values of known nodes within a multiple raster content, where multiple input images, some or all of which may be sub-sampled, are merged according to a given rule, to form an output image, the method comprising the operations for each input image individually, and comprising the steps of:

(a)   forming a database of known nodes and corresponding known node function values, the known nodes being located such that a distance between any two adjacent known nodes is an integer power-of-two number;

(b)   searching from the database of known nodes for a first node such that the input node is located between the first node and a second node adjacent to the first node, the first and second nodes having a first node function value and a second node function value, respectively;

(c)   computing the difference d between the input node and the first node;

(d)   shifting d to the right by k positions, k being the logarithm in base 2 of the distance between the first node and the second node; ~~and~~

(e)   computing the function value of the input node by combining the first node function value with the product of the shifted d and the difference between the second node function value and the first node function ~~value.~~value;

(f)   generating a first lookup table that includes node indices corresponding to the known nodes and the corresponding node function values;

(g)   computing inter-node exponents as needed; and

(h)   loading the first lookup table into the database.

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2.   (Currently Amended) The method of Claim 1 wherein operation (a) comprises the operations of:

generating ~~a first lookup table and~~ a second lookup table, ~~the first lookup table including node indices corresponding to the known nodes, and corresponding node function values,~~ the second lookup table including node indices corresponding to the known nodes, the known nodes, and the <u>computed</u> inter-node exponents, each of the known nodes not located at boundaries of the second lookup table being associated with two inter-node exponents which represent the logarithms in base 2 of respective distances between the corresponding known node with respective adjacent known nodes; and

loading the ~~first and~~ second lookup ~~tables~~<u>table</u> into the database.

3.   (Original) The method of Claim 2 wherein the known nodes correspond to a dimension of a first multi-dimensional space, and the node function values in the first lookup table correspond to a dimension of a second multi-dimensional space.

4.   (Original) The method of Claim 3 wherein the first multi-dimensional space has an origin, and wherein, in operation (b), the direction of search for the first node with respect to the input node depends on the location of the origin.

5.   (Original) The method of Claim 1 wherein, in operation (b), the direction of search for the first node with respect to the input node is programmable.

6.   (Currently Amended) The method of Claim 1 wherein operation (a) comprises the operations of:

generating a <u>second</u> lookup table, the <u>second</u> lookup table including node indices corresponding to the known nodes, the known nodes, corresponding node function values, and <u>computed</u> inter-node exponents, each of the known nodes not located at boundaries of the lookup table being associated with two inter-node exponents which

represent the logarithms in base 2 of respective distances between the corresponding known node with respective adjacent known nodes; and

loading the second lookup table into the database.

7.   (Original) The method of Claim 1 wherein operation (a) comprises the operation of programming locations of the known nodes.

8.   (Currently Amended) The method of Claim 1 wherein operation (d)(g) comprises the operation of computing the logarithm in base 2 of the distance between the first node and the second node to obtain k.

9.   (Currently Amended) A system for computing the function value of an input node based on function values of known nodes, the system comprising:

a database storing a list of known nodes, nodes and corresponding known node function values, and inter-node exponents, the known nodes being located such that a distance between any two adjacent known nodes is an integer power-of-two number, each of the known nodes not located at boundaries of the list being associated with two inter-node exponents which represent the logarithms in base 2 of respective distances between the corresponding known node with respective adjacent known nodes;

a search module searching from the database for a first node such that the input node is located between the first node and a second node adjacent to the first node, the first and second nodes having a first node function value and a second node function value, respectively; and

a compute module, in communication with the search module, comprising:

a combine module computing (1) the difference d between the input node and the first node, (2) inter-node exponents, and (3) the difference DV between the second node function value and the first node function value;

a shift module shifting d to the right by k positions, k being the inter-node exponent associated with the first node with respect to the second node; and

a multiply module multiplying the shifted δ with the difference DV and outputting a product value;

wherein the combine module combines the first node function value with the product value to form the function value of the input node.

10.   (Currently Amended) The system of Claim 9 wherein the database includes a first and a second lookup tables, the first lookup table including node indices corresponding to the known nodes, and the corresponding known node function values, the second lookup table including the node indices, the known nodes, and the <u>computed </u>inter-node exponents.

11.   (Original) The system of Claim 9 wherein the known nodes correspond to a dimension of a first multi-dimensional space and the corresponding known node function values correspond to a dimension of a second multi-dimensional space.

12.   (Original) The system of Claim 11 wherein the first multi-dimensional space has an origin, and wherein the search module searches for the first node in a direction, with respect to the input node, that depends on the location of the origin.

13.   (Original) The system of Claim 9 wherein the search module searches for the first node in a programmable direction with respect to the input node.

14.   (Currently Amended) The system of Claim 9 wherein the database comprises a lookup table, the lookup table including node indices corresponding to the known nodes, the known nodes, the corresponding node function values, and the <u>computed </u>inter-node exponents.

15.   (Original) The system of Claim 9 wherein locations of the known nodes in the database are programmable.

16.   (Original) The system of Claim 9 wherein the system is implemented on an integrated circuit.

17-19. (Canceled)